

JAMES C. BURKE PAPERS

Volume 3

*The Hoax of the Healing Waters,
And Short Papers on Diverse Topics*

James C. Burke



Cover: This photograph shows the view of the bridge to Ocean Isle Beach, N.C. from Gause Landing (Photograph by James C. Burke, 2001).

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VOLUME III

The Hoax of the Healing Waters,
and
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by

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with contributions from

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THE HOAX OF THE HEALING WATERS

Gause Landing

Early in February of 2001, Dr. Robert Brown, Chairman of the Psychology Department at the University of North Carolina, asked me to read an article in an anthology called *Borderline Oddities for the Millions*. It contained an article by Joseph S. Hufham entitled "North Carolina's Healing Stream." Sherbourne Press Inc., the publisher of the book, seemed to have been a pseudoscience clearinghouse. A search of the out-of-print books on an online database revealed a host of "For the Millions" books: *E. S. P for the Millions*, *Handwriting Analysis for the Millions*, *Mysticism for the Millions*, *Psychic Self-Improvement for the Millions*, *Phrenology for the Millions* and *Spirit Communication for the Millions*. This was not the output of a scholarly operation. Perhaps, the "For the Millions" meant for the gullible, I thought. The article that I was researching claimed that the waters of the Shallotte River, particularly where the river empties into the Intracoastal Waterway, had curative properties. Since the sites referenced in the article were in an area of nearby Brunswick County, Dr. Brown thought I might be able to write a paper on the origin of this piece of local folklore using local archival sources. It seemed to be a fascinating project.

Immediately, I contacted Donald Hickman, who had grown up in Brunswick County, and was researching his own community of Hickman's Crossroads. He told me that he had recently talked to 92-year-old Elbert Pigott, a long-time resident of Gause Landing. Mr. Hickman recommended that the two of us visit Pigott. Since Hufham mentions Gause Landing in his article as being one of the sites of these miraculous cures, Pigott seemed to be the right person to interview about the history of the area. We agreed to set a time in early spring to visit him when the weather would be pleasant. On the morning of Saturday April 14, 2001, we drove out to Brunswick County for the visit. Along the way, we discussed my project. Mr. Hickman had attended school in Shallotte, and was related to many people in the area. Since he was writing a history of his community, it would seem that if there were legends about the healing properties of the waters of Shallotte Inlet, he would know about. He didn't.

We took Business 17 through Shallotte. I recall remarking to Mr. Hickman as we stopped at the Shallotte River to take some photographs of the river that *The North Carolina Gazetteer* states that the river was named after an onion – the shallot – that grows wild in the area. After proceeding through Shallotte, we followed Highway 17 to Grissettown. We took NC 904 at Grissettown to NC 179. Before we reached NC 904, we took the turn onto Gause Landing Road (SR 1159). The road was covered with a canopy of old grown trees – mostly water oaks. One in particular most have been there for hundreds of years. Mr. Pigott's house was located at the top of a bluff that descended gently to the Intracoastal Waterway. Gause Landing, at the base of the bluff, framed by large water oaks with expansive branches that appeared to form a natural proscenium framing a view of the water.

Hufham had stated in his article that he experienced the cure of an eye infection in the 1940s. He wrote his article in 1963 while working for *The News Reporter*, the newspaper at Whiteville, NC. He was hoping that others would come forward with testimonies of similar cures. The responses he received all recommend the “healing” water from Shallotte Inlet and the Gause Landing area. The Intracoastal Waterway, a manmade channel that was gouged through the wetlands, gave me cause to wonder whether this feature was the determining factor in these alleged cures. The Intracoastal Waterway was constructed during the 1930s. A map from 1931 by Lewis L. Merritt, CE, of showed the proposed cut through the wetlands, a cut that obliterated a maze of small channels and small low-level islands in its path. The tidal flats were dredged away to make a deep channel carrying seawater. Mr. Pigott had worked with the Army Corp. of Engineers on this project.

Mr. Pigott was an active man with a quick wit. He has been a resident of Gause Landing most of his 92 years, having built his house there before the Second World War. His knowledge of the area is extensive. He was able to point out the site of a probable Native American settlement near the landing, in a grove of oaks, which predated the Gause family. A visitor once asked him about the age of one particular large specimen in this grove. Pigott asked the visitor what he thought, to which he received the response, “Oh, at least a hundred years.” Mr. Pigott replied, “I’m nearly a hundred years old, and I don’t think that tree has grown an inch in my lifetime.” He told of the treasure hunters that had destroyed the chimney of the 18th century Gause home by undermining its foundation in search of legendary hidden stashes of money. A utility pole now marks the site of the chimney, which was located across the street from Pigott’s home. He knew about the Brick Landing nearby, where it was said English bricks were unloaded for the building of the Gause house and tombs.

This was North Carolina history, and I was glad to be taping the interview. However, when it came to the healing waters, Mr. Pigott stated that there was no folklore about the water. The whole business was “I think it’s just some people talking ... the water had only been good for fishing, and now it not good for that anymore.” Mr. Pigott had recalled that as a boy fishing for flounder with his father that the shrimp had been so numerous that they obscured the flounder that were resting on the bottom. The oysters had been the best in the state. Today, the waterway is polluted by runoff. Still “people come as far away as Charlotte to fish,” there is not much left for them to catch.

Mr. Pigott stated that only people from other parts of the country came to collect the healing water, never local folks. The outsiders, Pigott chuckled, claimed, “The water at Gause Landing was supposed to be the best.” The locals wondered what the entire “goings on” was about. The period of time that people took water from Gause Landing and Shallotte Point was, according to Elbert Pigott, for the 1950s through the 1970s. All the names mentioned in Hufham’s article were from Whiteville, Riegelwood, and Delco, and Mr. Pigott did not recognize any of them. The only local event that occurred at Gause Landing prior to the healing water craze was that some local churches used the area for baptisms. After Mr.

Pigott took us to the Gause family tombs near the Ocean Isle Beach Airport on Duck Pond Road, we drove back to Wilmington that afternoon, having made a pleasant day of it.

Legends start locally and enter the historic record locally. These connections can be traced back to earlier times, even to the first settlement of an area or the pre-European. Outsiders are supposed to know *less* about a legend - not *more* than the locals! It was becoming apparent that the healing waters of Shallotte had entered the public mind *ab ovo*--at the desk of Joseph S. Hufham, not at Gause Landing and Shallotte Point. It was an April Fool's joke run amuck. Elbert Pigott remarked, "I don't know how it got started." It seems to have had its start in print. The life of the myth remained only as long as the book remained in print. The "water gatherers" stopped coming around in the 1970s. The best lessons to be learned from this case are that legends are part of the social continuum of a community, and if the phenomenon does not recur in local documentation, it is suspect.

Joseph S. Hufham was born on July 13, 1902 and died on May 20, 1990. He edited a column for *The News Reporter* of Whiteville, North Carolina called "Racy Sketches" through the early 1960s. Dr. Brown has recommended from time to time that I should approach the subject again with the goal of writing a scholarly paper on the differences between folklore and hoax, and I have seriously entertained the thought many times, but on each occasion I have found myself quickly mired down in other research. Elbert Pigott passed away in 2003. I still enjoy listening to his quick wit on the recordings we made the day of our visit.



Figure 1. On the way to Shallotte, North Carolina to see the Shallotte River



Figure 2. Bridge over the Shallotte River on Bus US 17 in Shallotte, North Carolina



Figure 3. A view of Shallotte from the bridge over the Shallotte River



Figure 4. Vegetation on the bank of the Shallotte River



Figure 5. Upstream wetlands on the Shallotte River



Figure 6. Sediment accumulating near the bridge over the Shallotte River



Figure 7. The gigantic cross in the town of Shallotte



Figure 8. Gause Landing Road SW off NC 904/179 near Ocean Isle Beach, N.C.



Figure 9, Tree-lined Gause Landing Road extends to Intracoastal Waterway



Figure 10. A picturesque cottage shaded hardwoods on Gause Landing Road



Figure 11. A view of the waterway from Elbert Pigott's yard



Figure 12. F. Donald Hickman (left), with tape recorder, discusses the history of Gause Landing with Elbert Pigott (right).



Figure 13. Elbert Pigott (left) and F. Donald Hickman (right)



Figure 14. Donald Hickman points to the oak tree in Elbert Pigott's yard. During Hurricane Hazel the water of the Intracoastal Waterway rose to the base of this tree.



Figure 15. An ancient live oak near the home of Elbert Pigott



Figure 16. The site of a possible Native American settlement at Gause Landing according to Elbert Pigott



Figure 17. A canopy of live oaks shades the road down to the old landing



Figure 18. There is a house on the water beyond this yard



Figure 19. The path leading to Gause Landing



Figure 20. Bridge over the Intracoastal Waterway on NC 904



Figure 21. Gause Landing



Figure 22. Ocean Isle Beach can be seen from Gause Landing



Figure 23. The end of Gause Landing Road



Figure 24. Building debris and oyster shells on the shoreline at the Gause Landing

WILLIAM BLEDDYN POWELL AND GRANITE

William Bleddyn Powell was the architect of the 1887 Atlantic Coast Line office building in Wilmington. As the ACL complex expanded, this building became known as Building "A." This structure, though its edifice was enlarged later, maintained the Romanesque style of the original design. The 1 July 1887 issue of *The Wilmington Daily Messenger* praises the design as "A handsome edifice of splendid architectural design embodying spaciousness, safety, strength and durability." A summary of its architectural features can be derived from this newspaper article and a second article in the same publication that appears on 13 July 1887.

- 1) *Foundation*. "The foundation of the exterior walls" was "three and one half feet thickness of ten inch timber, which are placed crosswise" situated "eight feet below the basement floor."
- 2) *Foundation Piers*. " ... each pillar consists of two piles with two pieces of lumber twelve by twelve running the entire length of the building on which are built brick pillars two by eight capped with a square piece of granite ten inches thick."
- 3) *Footings*. "The posts are placed in cast iron footings" on the foundation.
- 4) *Wall Thickness*. The outside walls are two feet and three inches thick at the base and twenty and one-half inches at the eaves. The Front Street walls are thicker to resist the pressure of the earth of the street. A two-inch space inside the wall acts as a dampness barrier. Ties were "one-quarter by one-inch galvanized iron"
- 5) ... that had been "dipped in coal tar."
- 6) *Brick Used in Walls*. The rear wall was built with Richmond paving brick and the remaining walls were built with Richmond pressed brick. Peerless Brick Company manufactured the molded bricks.
- 7) *Woodwork*. The interior woodwork was oiled and varnished yellow pine.
- 8) *Roof*. The "rise of the roof was sixteen and one-half feet". It was covered by slate "from Buckingham Quarry" in Virginia. The roof was ornamented with a terra cotta "creston."
- 9) *Chimneys*. The chimneys were "capped with Maryland Brown Stone."
- 10) *Entrance*. The "stringers for the arch at the entrance" were cut from "Contentnia (Contentnea) granite from Wilson (North Carolina)."

11) *Architect*. “Mr. W. Bledyn (Bleddyn) Powell, of Philadelphia, who made the design for the new depot of Richmond, Va., who is now architect of the Pennsylvania Railroad Company, and has designed many of their handsomest depot buildings.”

12) *Approximate Cost*. The 13 July 1887 issue of *The Wilmington Messenger* gives the cost to be about \$30,000.

In the course of my research on the walls at the old ACL/Wilmington & Weldon Railroad depot at Wilmington in the fall of 2000, I found the newspaper article mentioned here early in the project. My first set of photographs included those of a wall on Nutt Street behind the current television station. By comparing archival photographs of this area, I had determined that these walls had been heightened after the demolition of the ACL buildings. The materials used to construct this weak addition included slate roof tile, floor tiles, rubble, and bricks. However, since I was not studying these walls, I did not include my finding in the report I submitted at the end of the term.

I made an effort to find out more about William Bleddyn Power by contacting the Pennsylvania Railroad Museum in Strasburg, Pennsylvania. I also thought about visiting the public library at Richmond to see whether they had any material about Mr. Powell. As it would turn out, I planned to visit both places during the Thanksgiving break that term, though, when the time came, I had reservations about turning a holiday invitation into an excuse to conduct research. Like my findings on the walls made from the shattered remains of his building, research on the career Mr. Powell and the Richmond Depot would have to wait.

However there is one piece of information in the 1 July 1887 article that was directly relevant to my report – the Contentnea granite from Wilson – that could be researched quickly. In UNC-Wilmington’s library, I found a bulletin published in 1954 by the North Carolina Department of Conservation and Development titled *The Commercial Granites of North Carolina* and written by Richard J. Council. The granite quarry near Elm City north of Wilson seemed to fit the site, not only of the granite in Mr. Powell’s building, but also that of the earlier retaining wall. The quarry was located along the railroad; the stone had been quarried at that site intermittently since the 1850s; and the description of the granite provided in the bulletin seemed to match that of the granite in the wall. I photocopied a few pages from this bulletin to show to my professor.

My professor, however, did not want me straying into geology, “The assignment is to find the date the wall were built using archival research – available here. If you can’t find the answer within these limits, then that’s what should be in your report. If you were to find out that the stone came from this quarry, you’re still left with the same 1850 to 1880 time frame that you’ve figured out from archival research alone.” Nothing else could be accomplished during the time that remained in the term, so I abandoned this line of inquiry for the time being.

During the summer of 2003, while trying to bring my files current, I happened on the file containing the materials I collected concerning the 1887 ACL building in Wilmington. I placed this material in my “to do” pile. By early November, I decided it was time to find out something about Powell. I emailed an enquiry with transcriptions of the two articles from *The Wilmington Messenger* to The Pennsylvania Railroad Technical and Historical Society and the Literature & History Department of the Richmond Public Library.

Both organizations responded promptly. The archivist at The Pennsylvania Railroad Technical and Historical Society stated that there were no records on individual employees in their collection, but he would pass the articles on to an expert at the University of Delaware. The expert sent me a citation from the *Biographical Dictionary of Philadelphia Architects in the 19th Century*. According to this citation, William Bleddyn Powell (1854 – 1910) working in the Pennsylvania Railroad’s Engineer of Bridges and Buildings office, was second to John McArthur, the designer of Philadelphia’s City Hall and City Architect of Philadelphia. Powell retired in 1909. Some of the stations he designed were those at Harrisburg, stations along the Chestnut Branch, and the Charles E. Pugh House in Overbrook. The citation also included references to the Byrd Street Depot and freight House in Richmond. The research librarian sent a number of newspaper articles and a photocopy of a period photograph of the station. The design elements of the Richmond Depot appeared remarkably similar to those of the ACL Building A and Building B in Wilmington. One newspaper article from the *Richmond News Leader* dated 31 January 1956 includes a brief history of the site. The article mentioned that the building ceased to serve the function of depot after 6 January 1919. An accompanying photograph of the building in the process of being remodeled as a one-story structure was included. A 22 March 1973 *Richmond times-Dispatch* article features a photograph of the station’s massive fireplace. However, the article is about the demolition of the building due to the extension of the 9th Street Bridge. It appears that more of Powell’s work has suffered the fate of countless architectural treasures. It was in the way of somebody else’s definition of progress.

Before returning Powell’s file to its drawer, I emailed a copy of the material that I have accumulated for all sources to each of the individuals that sent me information so that they will have all the pieces of the puzzle. As is true of most unwritten rules of research etiquette, doing so leaves a favorable impression.

The need to visit Elm City did not come to the fore until November 2002 when I was preparing an article for a student publication while studying historic preservation at UNC-Greensboro. I had been in Elm City in February of that year taking photographs but didn’t have time to look for the quarry. That day was particularly cold, there was intermittent freezing rain, and I was in considerable pain after having extensive oral surgery three days earlier. When I returned to Elm City in November of 2002, my only objective was to obtain a sample of granite. I had enlisted the aid of Cyn Johnson. In addition to having a talent for finding places off the beaten path, she is very personable and always devises the best solutions to difficult problems. She suggested that ask in town. It proved to be a good move. We were told where the quarry was, and also given the name of the person in charge of the facility. However, when we drove to the site, we found that it closed.

As we were driving back to the highway, Cyn stopped suddenly, and turned into the driveway a house adjacent to the quarry. There was a man working in the yard. As we approached the man, he said, "I'm not buying anything." She responded, "No, we are." I then presented my geological map and explained that we needed some information about the quarry. He immediately warmed to us, and told us that the quarry was really old and deep. It was filled with water now, and he had heard rumors that there was equipment left at the bottom forty years ago. Cyn then spotted some pieces of granite around a flowerbed. "Did this come from the quarry?" she asked. The gentleman assured us that it did, so I offered to buy one of his rocks. Laughing, he remarked that I could have as much as I could carry as he pointed to a pile of it. Thanking the man, I indicated that one piece was enough. He told me that I could have my pick, adding, "Just make sure you get a good one."

Back in Wilmington, I took a detailed set of photographs of the rock – some close enough to make out details of the stone's grain. It seemed to be a close match, not only to the retaining wall at the railroad depot in Wilmington, but also to the stone used in building the piers of the Rockfish Creek railroad bridge on the Pender/Duplin county line, and the stone used for the great piers of the old railroad bridge over the Roanoke River above Weldon as well. The object of this paper, unlike the earlier archaeology report, was to identify the source of a building material, not to find out how old it was. However I did use some of my archival research in this paper, because by this time I had found most of the stockholders reports for the years 1850 through 1860. When I was finished with my piece of Elm City granite, I donated it to the New Hanover County Library.

The historical record extends beyond the written word, and it is appropriate to suggest that an interdisciplinary approach to historical research should be encouraged when practical. A piece of granite provides a map that leads to unique formation that differs from similar specimens of the same type. The growth rings of trees record seasonal conditions and in soil horizons we can determine the history of its use.

A BRIEF ON BRICKS (draft)

Introduction

Replacement of bricks, in whole or part, in restoration projects should be approached with the intention of achieving as close a match as possible. To achieve this, the preservationist must be able to provide makers of replacement brick with accurate information about the original brick. By inspection one must be able to identify period brick making techniques used in the historic structure, and identification of sources of clays used in the production of replacements. This brief will describe the interdisciplinary science of brick identification and demonstrate how these techniques can be applied to bricks manufactured in southeastern North Carolina before 1900.

The preservation expert attempting to match a clay source – even when the clay source is well documented – must be aware that fluxing materials can vary throughout some clay deposits. In this case, a higher or lower firing temperature might well alter the appearance and strength of a replacement brick made from a matched clay. The goal of the manufacturer of modern brick, if employed to produce a batch of historic replacement brick, might deviate from the goal of the preservation expert on this point. Even when provided with an exact match of clay sources, the preservation expert is looking for a replacement that looks and acts like the original even if it is under fired or over fired. A perfectly fired brick placed in a wall of imperfectly fired brick will not have the same porosity, coefficient of expansion, and electro-chemical properties as the original.

The Physical and Chemical Properties of Clays

Clay is sediment formed through the erosion of *felsic* minerals (persilicic rocks). Felsic minerals contain high amounts of silica (65 percent or greater of SiO_2), and are common to igneous, plutonic, and some metamorphic rock. The parent material of many types of clay is *feldspar*. Feldspar, a silicate of aluminum with traces of potassium, sodium, calcium, and barium, is found in intrusive igneous rocks such as granite. The crystal forms of clay minerals may be hexagonal (kaolinite), tubular (halloysite), and can more hydrous (montmorillonite) or less hydrous (illites). The mineral *kaolinite* is the principal component of clays used in the making of bricks and ceramics. Ceramics contain more kaolinite, and brick earths contain less kaolinite or illite with quartz, mica, calcium carbonate, organic material, and salts in varying proportions. Pure kaolinite is chemically described as *Hydrous Aluminum Silicate* [$\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$ or $(\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O})$]. Water ($2\text{H}_2\text{O}$) acts as a lubricant among aluminum silicate molecules, giving raw clay its plasticity. The principle is much like placing water droplets between panes of glass: the water both holds the surface of the panes together, and also allows the panes to slip across the surface where they make contact. Drying and burning removes the water from clays, thus making a non-plastic solid. At higher temperatures, aluminum silicates fuse to make a glassy solid. The process is called *Vitrification* (the vitrified surface of a brick serves as a protective

moisture barrier). The size of grains of clay is usually determined to be less than 0.004 mm (0.00015 inches). These grains are considerably smaller than grains of sand (0.063 – 2.000 mm), and can remain suspended in water when sand and silt have been deposited out of solution. In places where water trapped in depressions evaporates, clay, because of its size, tends to be deposited in formations called *lenses*. Further compaction and cementation of these deposits can cause the *lithification* of these sediments into rock.

Clays can be divided into two distinct categories: 1) Primary clay is formed by the breaking down of the parent rock through hydrothermal action; 2) and Secondary clay is formed by fluvial, lacustrine, glacial, marine, or eolian processes. Primary clays tend to contain fragments of the parent material, and are found close to its sources. They can also be termed *residual clay*. Secondary clay, the material of choice for brick making, is often termed *alluvial clay*. Bricks are made from both types of clay.

Impurities in Clay

Clays used in brick making may contain quartz and feldspar (common sand), along with a range of mineral and organic impurities. These impurities are classified into fluxing and non-fluxing categories. Fluxing materials are necessary in order to achieve a vitrified brick; however the proportion and kind of fluxing materials can determine the temperature at which the clay vitrifies. The fluxing materials commonly found in clays are alkalis, calcium oxide (lime), magnesium oxide, and silica.

Alkalis in clay include ammonia (found in damp clays with an abundance of decayed organic material). Ammonia is quickly lost in the firing process. Potash and soda, however, require considerably higher temperatures to vaporize, and may affect all stages of burning. Alkaline salts such as potassium carbonate, unless chemically altered in the burning, will remain water-soluble. Salts of this type may form a white coating on the finished brick (called *efflorescence*) when they are rendered soluble as the brick absorbs moisture. However, the presence of soluble alkaline salts on the surfaces of bricks can provide clues to the origin of the clay from which it was made. Alluvial clays and clays from regions that experience adequate rainfall and moderate yearly climates tend to have less of an accumulation of salts. Salts percolate out of the clay and are taken away by runoff into the drainage basin and are carried with the flow. Alkaline sulphates, such as iron sulphate, can release sulphuric acid during burning that will react with the clay base and other alkaline compounds in the clay resulting in blistering of the surface and internal weaknesses. Mica, an insoluble alkaline compound, may remain as a solid in fired brick because of its extremely high melting point. The presence of large particles of mica in brick made from residual clays – such as is found near intrusions of some granite – is not indicative of bricks made from alluvial clays. Iron present in clay is not only a flux, but also a coloring agent. Iron is present in clay in the form of silicates (such as mica), oxides, sulphates, sulphides, and carbonates. Ferrous carbonate and ferrous hydrate, unlike ferrous silicates, are not usually present in the parent material and enter the clay with ground water. When fired, ferrous hydrate turns to ferrous oxide. If the temperature of the firing is not properly controlled – a situation that was common prior to the use of gas kilns – the presences of ferrous salts would produce red bricks with a black interior. Raw clay may contain various

ferrous and ferric compounds in varying proportions that produce a range of colors from yellow to black, and these proportions determine the color of the brick when it is fired.

Calcium carbonate, common to clays found near marl deposits and limestone deposits, produces carbon dioxide when the clay is fired. This arrests the coloring action of iron oxides, and also deforms the brick. The action of carbon dioxide in a brick is akin to the action of yeast in bread. As the brick cools, it will also absorb moisture from the air, will swell further, and be more porous. Higher temperatures stabilize the calcium carbonate in clay by forcing its interaction with silicates. However, the brick will have the appearance of stoneware because the calcium carbonate will interfere with the coloring actions of iron compounds present.

Hydrofluoric acid will produce effervescence if calcium carbonate is present in clay. Gypsum (hydrated calcium sulphate) when present in clay can release sulphuric acid under heat and will cause blistering just as iron sulfate does. Generally, the presence of calcium is a strong indicator that the brick was made from clay found in coastal plain formation where cretaceous sediments are found, but it also can be found in areas where calcium rich feldspars exist.

Non-fluxing impurities in clays include silica, organic matter, various metallic oxides, and water. Silica, in the form of quartz and sand, can decrease tensile strength in bricks. Large grains of silica can cause a brick to expand when fired, and smaller grains will inhibit shrinkage. Metallic oxides such as titanium oxide are found in slates, and determining their presence in bricks can be useful in finding a clay source. Organic matter in clay is burnt off when a brick is fired. Water evaporates during firing.

Brick Clays and Bricks in late 19th Century North Carolina

In 1897, the North Carolina Geological Survey published a preliminary report by Heinrich Ries on the North Carolina clays and clay industry (NCGS Bulletin No. 13). This report included information that the preservation specialist should find valuable. Through careful analysis of many clay sources throughout the State, Ries found that North Carolina clays were composed of 52-70% silica, 13-28% alumina, 1.5-11.5% ferric oxide, 0.10-2.5% lime, 0.10-1.5% magnesia, 0.20-4.5% alkalis, and 4-12% water (total fluxes ranging 3.5-17.5%). Clay sources in Bladen, Buncombe, Burke, Catawba, Cleveland, Cumberland, Forsyth, Gaston, Guilford, Halifax, Harnett, Jackson, Lincoln, Macon, Mecklenburg, Montgomery, Rowan, Richmond, Robeson, Surry, Union, Wake, Wayne, Wilkes, and Wilson counties are identified, and are subjected to rigorous chemical analysis. Companies manufacturing bricks at the time are named in this study, and substantial detail is provided about the processes and techniques that are used by these companies.

For example, an analysis of the brick clay at *Dean's Brickyard* in Greensboro is composed of 59.27% silica, 22.31% alumina, 6.69% ferric oxide, 0.25% lime, 0.13% magnesia, 0.90% alkalis, 1.90% moisture, and 9.00% water lost on ignition (67.20% clay substances, 33.25 free sand, and 7.97 fluxes). The specific gravity (ratio of mass of the substance to the mass of an equal volume of water at 4° C) is 2.46 for this clay. The average tensile strength of briquettes made from this clay is 66 pound per square inch. The clay is residual and described as coarse. By comparison, the composition of the clay from the pit at

Poe & Brothers' Brickyard at Fayetteville is 64.93% silica, 17.08% alumina, 5.57% ferric oxide, 0.43% lime, 0.59% magnesia, 3.85% alkalis, 2.48% moisture, and 6.58% water lost on ignition (53.13% clay substances, 45.90 free sand, and 10.44 fluxes). The specific gravity for this clay is 2.55. The average tensile strength of briquettes made from this clay is 144 pound per square inch. The clay is alluvial and described as medium. The bricks made from both clay sources burn to a red color. While the chemical composition of bricks made from these sources might appear similar, the tensile strength of bricks differs significantly. It clearly disproves the notion that a brick is a brick.

In this study, the briquettes were fired in a regenerative gas furnace in a laboratory. The manufacturing of commercial brick in North Carolina at the end of the 19th century did not employ such high tolerances. Ries reports that no continuous kilns were in use in North Carolina at the time of his study. The soft mud method of making brick was the usual method employed by the State's brick makers because it "requires the least amount of capital." Handmade soft-mud brick tend to be more porous and weigh less than pressed brick. Unfired bricks were stacked in rectangle of 35-40 courses with "open spaces, or arches, left at the bottom of the pile." R. B. Morrison's *Brickmakers' Manual*, published in 1890, provides detailed illustrations of the arrangement. Wood was the fuel of choice for burning bricks. Ash residue from wood can infiltrate the surface of bricks close to the fire. The more remote bricks in this arrangement tend to be under-fired. These bricks are called *salmon* bricks for their pinkish color. These bricks were used for interior walls because they insulate; however, they are susceptible to moisture. When exposed to the weather, they wear much more quickly than those with a vitrified surface and have an earthy appearance and feel. *Clinkers* are over-burnt bricks found near the fire (Some have melted surfaces and some are fused together). *Bats* are bricks that break into parts during the firing.

Ries also mentions that the addition of coal dust (one bushel per 1000 bricks) to the clay aided the burning. The use of coal dust is a practice that started in England in the mid-17th century. The coal dust burns inside the brick when it is fired in the kiln. The result is an evenly fired brick. Some late 19th century North Carolina brick makers used this technique. However, most commercial brick makers of North Carolina of the time ran simple operations, which tended to be less controlled, and the builder would use clay for the closest source. Uniformly burnt bricks were a rarity, and are more likely to be found where large permanent downdraft kilns were constructed.

Physical Characteristics of Bricks

The common methods of molding in the late 19th century included hand molding, extrusion, and pressing. These methods imparted to the brick a number of distinguishing physical characteristics that can be interpreted by the preservation experts. The interpretation of bricks (as artifacts) emerged from research in the field of historical archaeology.

The most obvious clue to the origin of a brick is the *brand*. These are identifying marks in raised or sunken relief on the face of the brick. Karl Gurke, in *Bricks and*

Brickmaking, A Handbook for Historical Archaeology, provides an appendix that lists many of the common brands. The International Brick Collectors Association has an index containing over 11,000 brands. Firebricks and paving bricks usual bear a brand mark. Another distinguished mark on a brick is the *frog* or depression on one or both faces of a brick. This depression facilitated handling, and allowed more space for mortar. It was made by placing a piece of wood called a *kick* in the bottom of a mold. Some manufacturers tacked a covering of leather in these kicks, and the impression on the brick would carry the tack marks. Another characteristic to look for is the *strike* of the brick. On a handmade brick, the strike mark appears on the face. After the *clot* of clay was pressed into the mold, the molder would cut the excess clay from the top of the brick with a strike. This tool could be a stick, a drag board, a wire bow, or metal shim. The impression left on the face of the brick by this tool can be distinguishing as a fingerprint. The obverse face of handmade bricks appears smoother than the side that is struck. Brick machines that extrude brick material continuously used blades or a rotating wheel set with piano wire. An extruded brick will have strikes on both sides of the brick. These might appear as horizontal striations or curving striations. Extruded bricks bear marks from the die of the extruder. Striations on the sides of some extruded bricks are intentional decorative features.

As stated earlier, weight varies according to the manufacturing method used. Pressed bricks are the densest and most evenly fired of all the historic bricks. The pressing of brick was developed in the early 19th century, but remained for a considerable time a specialty of large-scale manufacturers. It was a time consuming process that produced an expensive product usually reserved for use in public building and large commercial offices. Because of the durable nature of pressed brick, it was also used as a paving material. Surviving streets that were paved with pressed brick attest to its value as a durable material – surviving the burden of traffic, in some cases, for more than a hundred years. The lightest brick is the handmade brick. When a handmade brick is broken it breaks unevenly. Pressed brick will cleave in layers parallel to the brick's faces. Extruded brick, the middle weight of the brick types, tends to cleave in layers that are at right angles to the faces. The edges of some imperfect extruded brick break off. Cracks in extruded bricks appear as concentric oblong lines on the faces of the brick. Depressions and deformities in extruded bricks also appear on the faces and not the edges. The die of the extruder creates more compression of the clay at the edges than in the center.

Size is another consideration in determining the origin and age of bricks. The National Brick Manufacturers Association established a standard size of 20.96 x 10.16 x 6.03 cm in 1886. The present standard for common brick is 20.32 x 9.53 x 5.72 cm. The size of English brick was regulated by Parliament from an early time. An English brick manufactured between 1769 and 1784 would measure 21.0 x 10.2 x 6.3 cm. Before 1803, the size was increased to 23.5 x 11.0 x 11.0 cm. A volume standard of 150 cubic inches (2,458 cubic centimeters) was established after 1803.

HISTORIC PRESERVATION AND THE RURAL LANDSCAPE

(Unpublished Article, 2003)

Are the counties of southeastern North Carolina properly prepared to address the preservation needs of rural landscapes? Not as well as we should be.

The North Carolina State Historic Preservation Office's roster of counties lists Historic Preservation Commissions for Cumberland, Duplin, New Hanover, Onslow, Robeson, and Sampson. However, it might come as a surprise to some that many large rural counties in North Carolina at this time – Bladen, Brunswick, Columbus, and Pender – do not have historic preservation commissions.

Without such a facility in place, countywide surveys of historic resources cannot be undertaken thoroughly. Outside experts rarely have the time or funding to sally forth into hundreds of square miles of hinterland. An incomplete survey often brings the historic resources of large rural counties to the attention of the rest of the state, but doesn't tell the residents anything that they didn't hear from their grandparents. Without a historic preservation commission, residents of large rural counties might remain completely unaware of the historical significance of their property, as well as the tax advantages that come through National Register listing. If they are aware of the historical significance of their property and desire National Register listing but lacking the guidance of an informed commission, the nomination process might be overwhelming.

The interests of large rural counties that do have historic preservation commissions are not well served if the commission meets only to address a problem, concentrates its efforts only on preserving the manageable commercial and domestic architecture of small towns, or employs a preservation professional that haunts the halls of the county planning office waiting for someone to come to them. The first objective of any rural historic preservation commission is to know the extent of their county's historic, cultural, and natural resources – not what is basically out there, but what is actually out there. In the rural context, all resources overlap. The second objective is to make their findings readily available to county residents in an obvious way. They should not compile information and wait for somebody to ask. The third objective should be educating residents about preservation options and advantages. Achieving the first two objectives can only be accomplished by countywide survey and mapping of resources by category and age – a task that can be lightened through interdepartmental/interagency and community cooperation. The right GIS software is an essential tool in the process. The last objective is the last to be achieved, but the first to get started. The preservation professional working in a rural county who is not as recognizable to the residents as the county extension agent – or doesn't even know who the county extension agent is – is never going to muster any support in the community.

The training of preservation professionals should prepare them to specialize in rural landscape issues. Categorically, America's historic rural landscapes often pose problems for professionals in the historic preservation field. Many are architectural historians by training, and tend to fixate on one or more structures that either contribute to the historical or cultural significance of a landscape, or detract from it. They overlook ancient field patterns and roads; features of the natural landscapes – such as natural vegetation, wetlands, and streams – that are contributing to a historic landscape but that are nevertheless often overlooked; overgrown rural cemeteries, old mill runs, and sites of archaeological interest – evidence of the Native American presence, and early European settlement – might go unnoticed; and the artifacts of a region's recent economic past, and its transportation history, go unrecorded.

AN OVERVIEW OF AMERICAN HOUSING

The history of the American house from the Colonial Era through the 1950s can be divided into periods according to “house style,” methods of construction, form, and utilization of space. These categories describe intrinsic qualities of the dwelling as an object. However, criteria for classification of dwellings also include elements that are extrinsic to the object, and sometimes transcendent. Economic, political, and social factors, as well as philosophical concepts, also contribute to defining periods of “housing.” Periods of house styles and period of housing often overlap, but are clearly different topics. In order to establish beginning and ending dates, and the characteristics of these periods in the history of American housing, both the intrinsic and extrinsic factors must be evaluated. Rather than present a chronological summary of developments in all these areas, this essay will begin with an examination of the more familiar attributes of twentieth century housing and work backwards in time.

The twentieth century

Home ownership by the average American is the distinguishing quality of twentieth century housing. It had its start with financial changes that took place in the last decades of the nineteenth century.

The golden age of housing for the common people, particularly the late nineteenth century, was characterized by remarkably stable or even declining interest rates. Blended payments and longer amortization, new to the era, spread the burden of high initial payments of conventional mortgage financing ...¹

Changes in financial practices that allow more liberal policies in lending also benefited contractors and residential developers.

Developments in building technology made the process of construction efficient. Manufacturers mass-produced building materials that were consistently uniform in size and quality. This eliminated a considerable amount of time and labor that had been expended in prior times making the construction elements onsite from raw materials. Balloon framing and prefabrication not only made construction more efficient, it also opened aspects of construction to homeowners that had previously been the exclusive realm of craftsmen. New and less expensive materials such as poured concrete and concrete block eliminated the cost, time, and the specialized workmanship required by constructing similar elements using brick or stone masonry. The development of power tools represented additional savings in labor cost, and an increase in efficiency.²

The role of the developer and contractor largely remained regionally based during this period, which allowed for the close coordination between subcontractors and public

officials (zoning boards, building inspectors, and health officials). For potential homeowners, the twentieth century offered several different possibilities that cross class boundaries: one could purchase a home built by a contractor; hire a contractor (and possibly an architect as well); assume the role of the contractor; build the house without help using standard materials and power tools; or purchase a pre-made home, or a “kit home,” and place it on a lot. While the twentieth century produced many fine examples of contemporary architecture, and builders managed to utilize forms and styles from the past effectively, changes in financing of housing, coupled with advances in construction technology, represent the most substantial developments in American housing during this period.³ The manifold benefits of improved building technology and less constrained mortgage financing also attracted investment in all aspects of the process resulting in the creation of a housing market. The most recent period in American housing can be called “Twentieth Century Housing” (beginning with the early advances made in the 1880s, and extending into the twenty-first century).

One of the most significant New Deal reforms that influenced the subsequent development of American housing was the establishment of the Federal Housing Administration (FHA) in 1934. Then as now, the capital requirements and costs of securing a conventional home loan presented impossible obstacles for many. An FHA insured loan protects the lender in the event that the homeowner defaults on the loan while allowing loan payments to be based upon the homeowner’s household income. Less cash is required for closing costs. Therefore, the potential for homeowners is open to a broader segment of the population. Another New Deal institution, the Federal National Mortgage Association (FNMA, or more commonly known as “Fannie Mae”) was chartered in 1938 as a government sponsored (and a publicly traded since 1968) corporation to “securitize or buy the mortgage loans they originate” and issue mortgage-backed securities. This process frees more lender capital for mortgages. The Federal Home Loan Mortgage Corporation (FHLMC, or commonly known as “Freddie Mac”) was chartered in 1970 to “make sure that financial institutions have mortgage money to lend,” to aid consumers in finding an affordable house or apartment, and to provide liquidity to the mortgage market in times of financial instability.⁴

The core theme of American domestic architecture during the twentieth century is the expansion of the national economy progressing in step with the enfranchisement of diverse groups through home ownership.

House style and housing in the Victorian Era

American housing during the nineteenth century presents some problems in establishing divisions. Virginia and Lee McAlester organize the key periods of American housing using “changing architectural styles” rather than eras of socioeconomic change. The periods of changing style defined in their text are Colonial (1600 – 1820), Romantic (1820 – 1880), Victorian (1860 – 1900), Eclectic (1880 – 1940), and the American House Since 1940 (1940 – present). In the preface, the authors emphasize that the text is “a practical field manual for identifying and understanding the changing fashions, and

components of American houses,” and is concerned only with “the exterior appearance of houses.” By contrast, *The Elements of Style* divides major periods of interior architecture somewhat differently. Most notably, the American Victorian (1840 – 1910) is composed of “eight distinct architectural styles” – Gothic Revival, Italianate, Stick, American Queen Anne, Richardsonian Romanesque, Shingle, and Colonial Revival.⁵ While the two texts might group architectural styles into different periods, the dating of individual styles and division of styles remains fairly consistent. The context differs between exterior and interior, components of a dwelling and the style of individual elements: period is not considered an overarching determinant of architectural style, but rather a logical division of time within the contextual limits of style. The obstinate commitment to stylistic purity, and “being modern,” so prevalent in the other creative arts does not appear to be as pervasive in American domestic architecture. The preferences of the homeowners often change over time prompting renovations and additions that break with the original design. The “old fashion” for one generation is often reengaged by their progeny.

In the context of social history, the division of periods in housing can be set using changes in social attitudes as a standard. Clifford E. Clark, Jr. addressed nineteenth century changes in American domestic architecture within the context of “reforms centered on Christian family life,” and the accompanying idealism of the *cult of domesticity* that dominated public sentiment and influenced policy during this era. From his research, he observed that the term “housing” is expanded beyond architectural style to include aesthetic concepts and the demand for social responsibility.⁶ The family house had evolved to accommodate the needs of individual family members functioning in their redefined roles in a new social order. This period was one of great social moments. Abolition of slavery and temperance are two movements that flourished and gained widespread followings during this time.⁷ Other social movements included prison reform, public education, and humane treatment of the insane. Westward expansion, the growth of the middle class, industrialization, and railroad development paralleled these social movements.

The relationship between social change and the use of space within a dwelling was most evident with the changing role of women and the recognition of childhood as a distinct phase of life.⁸ Changes in floor plans resulting from these social changes included the addition of a nursery and individual rooms for children in the private areas of the house. These rooms were usually located upstairs, and access to this section of the house by stairways removed from the entrance hall area. Clark explained the difference between these arrangements and the floor plans of earlier houses.

If one starts with the floor plans, it is clear that a major preoccupation of housing reformers was to separate the “public” from the “private” sides of life ... By putting the stairs to the second floor, for example, in an unobtrusive position at the side of the house rather than in a central entrance hall as in the earlier classical revival houses, the reformers clearly implied that visitors were not welcome upstairs.⁹

The concept of the home as a sanctuary for the family unit, both in a practical aspect and a religious sense, was the primary objective of house reformers. The public area of the house

was principally the parlor. This was the environment where the family could interact with individuals from the community. The threat the family perceived from the outside world came through “the growing complexity of industrial America”¹⁰ and it was largely the concern of the suburban middle class. The Gothic Revival and Italianate styles and their associated floor plans were popularized through pattern books, and the middle class of the time patronized these styles. Individuality ascends to the zenith of middle class values. Compartmentalizing reached its extreme with the Queen Anne house in the late nineteenth century. Architectural style became more nearly associated with owner’s individuality than an expression of spiritual values.¹¹

While there is agreement between the sources mentioned that the year 1840 satisfies the requirement for establishing the beginning point for the major period of the American house in the nineteenth century, there remains some question about which term best defines the period – American Romantic or American Victorian? Or should it be divided into periods that coincide with significant events in American history? The American Civil War and Reconstruction interrupt all aspects of life in America beginning in 1861 and lasting well into the 1870s. After the war, the social order had changed drastically. As large numbers of the emancipated slaves migrated north, industrialization in the south drew the landless rural poor to the manufacturing core of the New South. Northern urban centers at the same time began to absorb waves of immigrants from southern and eastern Europe. As an intellectual and artistic movement, Romanticism appears to be inadequate to encompass all the change brought about by the Civil War. The Victorian style, through its drive to evolve into a vehicle for responsible individual expression, does not represent an architecture of Late Romanticism as it was acquiring uniquely American characteristics – the Prairie, Craftsman, and American Beaux Arts – while also embracing traditional Colonial styles. For the American middle class of the post-Civil War years, housing can accurately be described in terms of architectural change. Land development, primarily along railroad corridors, created new opportunities for economic expansion. Housing for the working class and emigrants of the time, however, was defined through consumer choice and practical home ownership. The family unit, not the individuals that comprise the family unit, is the core concept for this class. Acquiring mass manufactured goods, rather than resort to making their equivalent at home, was the path to domestic success. The most rudely constructed dwelling could be transformed into a sanctuary for the family with common consumer goods.

From the late nineteenth century to the beginning of World War I, reformers concentrated on improving the living conditions for the working class and emigrants by encouraging changes in household management, space usage, and sanitary practices. Elizabeth Cohen pointed out that these middle class sensibilities and a Colonial Revival aesthetic concomitant with a preference for consumer goods associated with that aesthetic tempered these reformers. However, the working class displayed a preference for out of fashion Victorian furnishing and draperies over the simpler furnishings of the Colonial Revival. In addition, emigrants often used space differently. Most notably, the kitchen often served as a social space: “Within this material compromise, traditional cultural values and new consumer benefits coexist.” In consideration of the developments in twentieth century housing, some aspects of usage of space and consumer choice of the working class homes of

the past might have carried over to mainstream home design.¹² The walls between kitchen and dining room appear less frequently in homes by the 1950s; and some barriers to the outside world are relaxed.

The eighteenth century

The architecture of the seventeenth century English colonies in America, as exemplified by the archeological remains of Clifts Plantation (Stratford, VA) “manner house,” began as a pragmatic and utilitarian response to the challenges of establishing an agricultural base quickly in order to sustain the English claim to, and exploitation of, the economic potential of the newly acquired land. The puncheon and palisade construction of early structures was likely a logical form of construction under conditions where shelter must be had quickly. The method of construction, according to Zelinsky, was an aboriginal contribution. Given the reality of having to construct living quarters while at the same time preparing land for the first planting season, simple log construction was the most practical method. Other contributing factors, in addition to the geographical isolation, included a scarcity of the following: skilled carpenters, milled lumber, an established system of land transportation, and currency. While the dwellings of the settlement phase more often had little division of space and an absence of ornament, it cannot be said that little craftsmanship was spent on their construction or that they were merely temporary structures.¹³ Not only were some dwellings used by several generations of owners, they were constantly improved, and some examples exist to this day.

The transition between the settlement phase and the Georgian style construction began around 1720. A central hallway unites the elements of the Georgian floor plan, which commonly exists in one-pile or two-pile arrangements. Colonial permutations of this English form often eliminated the fourth room in a two-pile configuration.¹⁴ There was, however, a gulf between the affluent few that could live in a Georgian house and the majority of the Colonial population. The spatial divisions of the Virginia plantation with its manor house are an expression of this two-tiered social order.

For some eighteenth-century Americans, the quality of housing improved markedly, but for most it changed modestly if at all. In architectural terms, the eighteenth century saw a growing disparity between kinds of people rather than a general advance in quality of life.¹⁵

While the Georgian style house in America represented revolutionary use of space, it cannot be coupled with the positive qualities of social change. The Georgian style after the Revolution would be a major step toward the more republican Federal style. The architecture of the Federal style was a truly popular American architecture, and it was infused with the vitality of an American idealism that supported its longevity (1780 – 1850).¹⁶ Yet, it is still the culmination of developments that started in the Colonial Era. In the context of changes in American housing, the Federal house could be grouped with all preindustrial dwellings.

Conclusion

For the student of architectural history, reading the cultural landscape is a necessary skill. But the interpretation need to be tempered by the realization that architecture is the physical manifestation of economic vitality on the landscape; and the state of housing (functioning architecture) cannot be separated from market forces, spanning local to global contexts. Recognizing house style is a starting point since certain styles coincide with periods of development in housing; however, some periods of housing align more accurately with periods in American history. However, the history of American housing can be divided into clear periods that dovetail with socioeconomic and political changes in the United States.

The first period would be the Colonial (including primitive dwellings and the Georgian Style). The Antebellum period of housing can be divided neatly into Pre-railroad and Railroad around 1840 (*A Field Guide to American Houses* uses this division). While the developments in house style during Reconstruction are minor, the demise of the antebellum plantation economy opened the South to new land development schemes, and encouraged emigration through cheap land values. Renewed railroad construction facilitated the growth of towns along railroad corridors. The opportunities to build, not house style, drove this period in American housing. As stated above, the twentieth century era of American housing can be set back to 1880, even though house styles remain the product of the Victorian. (This is not as odd as it might first appear since the best and the worse of the Victorian Era were given full scope in the *Gilded Age* before World War I.) While Richardsonian Romanesque and Queen Anne style mark a fitting end to the Victorian styles of house construction, financing and construction techniques for these dwellings built in these styles clearly mark the beginning of the twentieth century housing paradigm.

American housing benefited from an expansion of consumer credit during the 1920s. The Craftsman house, a prewar innovation in American domestic architecture, was extremely popular. Practical in the use of space and economic, it retained the earlier design concept of compartmentalization of domestic functions. The Art Deco and Art Moderne styles, along with advancements in construction techniques, offered the consumer new choices during the 1930s. The real advancement in American housing, however, came about through New Deal reforms in home financing. The next phase of American housing in the twentieth was the result of the Civil Rights movement. Prior to the 1970s, minority neighborhoods were “redlined,” a term indicating they the residents as a whole were not consider creditworthy. Thus, regardless of their individual industry or thrift, they were deprived of the benefits that white American had enjoyed through New Deal housing reforms. With the passage of the Fair Housing Act of 1968, the practice was prohibited.

The passage of the National Historic Preservation Act of 1966 gave birth to renewal and gentrification of historically significant urban housing and commercial space that had been abandon during the urban flight to the suburbs during the 1950s and 1960s. The renovation of the architecture of the past runs parallel with the individual experience based sensibilities of postmodernism. The architectural designs of new structures in

historic districts trended toward harmony with the existing historic character rather than stand apart from it.

The final phase of Twentieth Century Housing culminates in the housing bubble of the early 2000s. Fueled by a dark market for novel financial instruments, *derivatives* and *credit default swaps*, made it appeared the homeowner and investor alike couldn't go wrong betting on the housing market. The erroneous notion of countless unfortunate investors throughout financial history of "the market can only go up" proved disastrous once again the fall of 2008. The history of American housing in the twenty-first century begins at this point. It is too early to speculate on how the nature of housing will evolve in the coming decades.

Notes

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MRS. PARTINGTON AND THE HISTORICAL GEOGRAPHY OF AMERICA

Mrs. Partington, the creation of *Boston Post* newspaperman Benjamin Penhallow Shillaber, was a uniquely American cultural phenomenon that started as an anecdotal newspaper column in 1847 and quickly became a public icon. The New England widow with her undying faith in the Dudley Leavitt's Almanac, her homespun common sense wisdom, and her chronic penchant for using the wrong words, endeared herself to the American public. Newspapers across the country reprinted the Partington stories, and in the form of "as Mrs. Partington would say," created new Partington sayings. By 1854, Shillaber had compiled the first set of his stories into a book, *Life and Sayings of Mrs. Partington and Others of the Family*. The first edition was a bestseller for its time with 30,000 copies bought shortly after its release.

The historical geography of Mrs. Partington's America involves the westward expansion of the young nation, spanning the Federalist Period to the Gold Rush Era and the Mexican War. The fictitious but legendary Ruth Trotter of Dog's Bondage, New Hampshire, married Corporal Paul Partington of Beanville, New Hampshire, the son of planter Seek (short for Seek-the-Kingdom-continually) Partington (changed from Partyngetonne). The families of this marriage were recorded on the fly-leaf of a treatise on calcareous manures, "Married this day, January the 3, 1808, to Ruth Trotter, by Rev. Mr. Job Snarl." They settled down to domestic life in the Partington Mansion in Beanville. The house is described as being of scarfed logs covered with clapboard. An illustration in the book shows a New England hall and parlor structure with a gambrel roof, a central fireplace, and a second story window suggesting that sleeping quarters were likely above. The house was not the first to be built on the site as the story relates, yet it was the most substantial. Here the Partington patriarch, Seek, had "worshipped God and cheated the Indians according to the dictates of his own conscience and the custom of the times." His son Paul and his bride would enjoy the bliss of farm life in this same noble structure.

Shillaber, in his introductory sketch of rural New Hampshire, kindles in his readers that longing for the pre-industrial age. Even in the 1850s easterners were apparently chafing under the yoke of expanding industrialization and the urban social structure that it engendered. He describes a life of tending fields, mending harnesses, chopping wood, and preparing meals. Also included are detailed references to Thanksgiving feasts and Christmas dinners featuring poultry, cider, and pumpkin pies, visions that still evoke similar longings today. However, the story of Mrs. Partington is not about revisiting the past; it is about coming to terms with a changing America.

Mrs. Partington's domestic life is altered by three events. This first is the death of her husband Paul after the War of 1812; the second occurred when she became the guardian of her nephew Isaac (called Ike); and the last major change occurs when the Beanville Railroad is run through her farm. The result is the destruction of the 100-year old Partington Mansion and her removal to the town.

She accepts change heroically; however, as she charges recklessly out into the socio-political scene – the United States with its ever-expanding national boundary – and attempts to know it. She sees the Mississippi River; she studies the newspapers and learns about the California Gold Rush, and ponders “Our Relations with Mexico”; she meets notables of her day like Chang and Eng and Thackeray; she attends a session of the House of Representatives; and on the surface she would appear to be transformed into a cosmopolitan, if not an intellectual.

However, in reality it just isn’t so. She expects *The Father of Waters* to be a big man with dropsy. The eruption of Mt. Vesuvius translates into Partington vernacular as the “rupture of Mt. Vociferous.” Its burning “lather” was probably set afire by children playing with “fractious matches,” and could be put out by Mr. Barnacle and his fire brigade. “Provisions of the Constitution,” for Mrs. Partington, means transforming the man of war *The Constitution* into a merchant vessel. Adding to her misunderstanding of the current issues of her day is her distorted view of historical events. Take, for example, Mrs. Partington’s confusion of the 18th Brumaire (the November 9, 1799 seizing of the French government by Napoleon) with the December 2, 1851 *coup d’etat* of Louis Bonaparte, Napoleon’s nephew. When Ike reads her a comparison of the two events from a newspaper, she thinks that “Apollyon Bonypart” has returned. She replies, “Apollyon Bonypart! I remember all about him, and his eighteenth blue mare, too. I always wondered where he got so many of ‘em, - something like the woolly horse, I guess, - and when he was transplanted to Saint Domingo, Isaac, folks went up to the King’s Chapel to sing tedium about it, because they were glad of it. And now he’s come back again, with all his blue mares with him.”

Mrs. Partington did not understand history, politics, or geography very well, and at times it appears that she didn’t understand the meaning of half the words she used. Yet, not only did she travel extensively, she readily embraced new experiences without reservation. If this seems a bit of a contradiction, it was an American phenomenon for those times – to be naive and ill prepared, but always willing to rush into the unknown.

Mrs. Partington’s nephew Ike is a classic “wise ass” caught in the netherworld between childhood and puberty. He came into his aunt’s care when Paul Partington’s brother Peter died of wounds sustained in the “Indian Wars.” His mother had run off to join the Mormons. If this sounds somewhat like Tom Sawyer, it is likely that Mark Twain modeled his Tom and Aunt Polly after Shillaber’s Mrs. Partington and Ike. A whole generation of newspapermen created new Partingtonisms in small towns across America. They typically bore the prefix of “As Mrs. Partington would say ...” and then they would add “The Bay of Biscuits” or “An old boss contractor.” Mrs. Partington was as ubiquitous as Kilroy (at least in the printed word). Shillaber wrote a sequel in 1872 called *Partington Patchwork*, and *Ike and his friends* in 1879. Both books were successful; however they were really more of the same. When compared to Twain’s *The Adventures of Tom Sawyer* (1876), one can see in these two books that the buoyant enthusiasm of the 1850s had vanished following the Civil War. However darkness exists in Twain’s humor that Shillaber never approaches.

After Shillaber died in 1890, the Partington books faded into obscurity. In its day, it was the humor of the people, and those people lived in a world of ever-expanding boundaries. The work was stamped with the culture and geography of the day. Now it is all history. Just exactly who was Princess Wasa and was Jenny Lind really that good? Mrs. Partington's references to the telegraph, omnibus, and "improved governors" now require the aid of a technological historian to interpret. And of course, the "18 Brumaire," the one piece of information you need to know to understand the Napoleon story, is no longer a date etched into the collective memory; it is buried somewhere in the Western Civilization textbooks. "So, what's with these blue mares?" Those might be the words of an undergraduate history major.

Yet, despite some dated material, the Partington stories are a snapshot of America prior to the Civil War. Mrs. Partington embodies the unity of contradistinctions that was antebellum America. She was gracious, yet she had all the tenacity and independence of a pioneer woman. She accepted the modern, while at the same time embracing tradition. She was always inquisitive, and insinuated her presence into the halls of power – if only to observe – yet, was equally adept in the domestic environment. For the times, she was a liberated woman.

Americans, like no other people, seem to be afflicted perpetually with the obsession of being modern. Even "the man on the street" in the 1850s was reasonably sure that he was living in an age of prosperity and progress unparalleled in human history. The one virtue that Mrs. Partington has that few of her neighbors and friend share is that she does not possess the capacity for self-delusion. As she fearlessly immerses herself in a world of railroads, gaslight, and the telegraph, she remains the common sense farm girl from Dog's Bondage. By 1861, the illusion of progress was gone. The same technology that held the world entranced in the 1850s was to make war more deadly. The American use of the railroad as a strategic instrument of war so impressed the Prussian field marshal Helmut von Molke, that he wrote, "Build no more fortresses, build railroads!" While there is no hint of things to come in Mrs. Partington's musings, she has a cutting insight into human nature: "people may be faster now, but they are no better than they used to be!"

Now we are removed from the world of 1850s progress by 150 years. Shillaber's works are no longer in print. In fact, if I had not read his stories reprinted in Wilmington newspapers of the 1850s on microfilm, I should never have known that he existed. Still, it might be worth noting that sufficient copies still exist that obtaining an original or reprint is not beyond the scholar's budget. After Shillaber's death in 1890, Henry O'Meara (1848-1904), a poet and fellow newspaper man, would write in his *Ballads of America* an epitaph for Shillaber and his age, "As his verse bore no venom and satire no sting- Good-by, Mrs. Partington, Blifkins, and Ike!" Still, the humor retains its freshness, so it is not likely the goodbye will be forever.

THE QUAKER PRESENCE IN BLADEN COUNTY, NORTH CAROLINA

White Lake appears in old maps and documents as Bartram's Lake. Approximately 17.3 miles from the junction of Highway 74/76 and Highway 87 a roadside marker reads "THE BARTRAMS. Naturalists John and William Bartram, 1765 and later, used their kinsman's house, *Ashwood*, as operating base. Stood 2 mi. E." It is almost fitting that this marker is set off from the road amidst the overgrowth of local wild flowers and shrubs. John Bartram and his son William are considered the most important American naturalists of the 18th century. Col. William Bartram, a prosperous planter, owned about 3900 acres of land. He was the half-brother of John Bartram.

The first Bartram to come to North Carolina was the father of John, who was also called William, a Quaker, who had come from the Darby settlement in Pennsylvania. However, their grandmother in Darby brought up John and his brother James. In 1712, the senior William was killed by Indians and their stepmother returned to Pennsylvania. The elder William's son, the Colonel Bartram mentioned above, married Elizabeth Locke and developed the plantation *Ashwood*.

Another landowner of early Bladen County that enters into the story of John Bartram's travels in the Carolinas is Richard Singletary. The Singletary plantation was located a few miles above Ashwood. Today, Singletary Lake, located below White Lake, commemorates the early presence of this pioneering family in the form of a geographic feature. From parts of Bladen County, John Bartram successfully transplanted the magnolia and other plants to his estate in Pennsylvania. The extent of John and William Bartram's travels in North Carolina in the years 1765 through 1766 include the region on the northwest branch of the Cape Fear River through present-day Bladen County to just short of the modern city of Fayetteville in Cumberland County. They also ventured into areas that are now Columbus and Brunswick Counties. Through their writings and detailed drawings, the Bartrams have passed on to the modern scholar the first reliable, purely scientific accounts of the plant and animal life in this region of the Cape Fear. More significantly, their work represents the beginning of a uniquely American tradition of research that would link the physical sciences with the expansion of the United States into unexplored regions.

Carvers Creek United Methodist Church in Bladen County can trace its history back to an early Quaker settlement. This church was established on the site of the Carvers Creek Quaker Monthly Meeting House, built in 1734. The church that stands today was built in the 1850s and replaces the log structure that stood on the same location. Carvers Creek was the first religious community in Bladen County. However, the Quakers did not remain in this region as more territory was opened to settlement in the middle and western parts of the state. With the start of the American Revolution, the last Quakers in Bladen County removed to the frontier because of their pacifist convictions.

There was a James Carver, Sr., and a James Carver, Jr. The senior Carver owned a sawmill on Carvers Creek (also Porters Creek). He was a Quaker who had come to North Carolina from Pennsylvania. It was James Carver, his son, who willed “two acres of land ‘where the meeting house now stands,’ ‘to our society of People called Quakers’” in 1753 (Grimes, J. Bryan. *Abstract of North Carolina Wills*. Raleigh: E. M. Uzzell, 1910. P. 65). The father, James, had willed the land on the “North side of the North West River” to him and his brother, Samuel, in 1739. In 1758, a Samuel Carver willed his plantation and a lot in Wilmington to his sons, also James and Samuel. The wills that exist would be difficult to determine which James or Samuel was willing what to whom without an examination of the names of the female heirs mentioned in these wills. Samuel’s wife, Arcadia, is mentioned as wife and executrix in the 1758 document that passes his plantation to his son Samuel. The *Deed Books* of Bladen County indicate that William Carver sold off land to Richard Elwell, John Drye, Alex Robeson, and mortgaged land to Charles Brown. All of these individuals have given their names to geographic locations in the immediate area (Elwell Ferry, Drye Road, and Browntown). It is likely the nearby township of East Arcadia might have acquired its name from Samuel Carver’s wife, Arcadia.

The Quakers eventually gave their meetinghouse and its land to the Methodists. Here, Bishop Asbury founded the first Methodist church in the region. The church cemetery, which is on the church grounds, contains the graves of some of the Quaker settlers. In 1859, Alexander Carter built the structure that stands today.

[Note: The once was a handsome brick school house in Carvers Creek not far from the Carvers Creek Methodist Church. After it ceased to function as a school, I have been told, it was a sewing factory. Thereafter, it was abandoned for decades. In the spring of 2012, it was destroyed by fire. The walls remain standing as of October, 2012.]



Figure 1. The historic marker for "The Bartrams" in NC 87 halfway between Riegelwood, N.C. and Elizabethtown, N.C.



Figure 2. Carvers Creek United Methodist Church, site of a Quaker Meeting House



Figure 3. The historic marker at Carvers Creek United Methodist Church

A PENNSYLVANIA TOWN

I scribbled notes the day after we took a walk around Hegins, PA. My friend described the local history in detail. The town of Hegins, named after Judge Charles W. Hegins of Sunbury, Schuylkill County, was incorporated in 1854. The town is situated on a rise that runs along PA 25 in the valley, and is flanked by Mahantongo Mountain on the north and Broad Mountain to the south. The town consists of several streets parallel to the highway. It takes only a few minutes to pass the town by completely. Through the center of the valley Pine Creek meanders erratically over a stony bed. I have observed that its current and depth vary seasonally, and judging from the size of the cobbles lining the full extent of its bed, it appears to run high and forcefully at times. A picturesque public park fronts a lake on the south side of town, complete with bandstand.

Beyond the town, on both sides of the valley, is farmland. The farmers plow their fields along the contours of the land, and these semicircular field patterns are obvious in aerial photographs. The inhabitants of Hegins are mainly of German ancestry. Towards the west side of the valley are Amish farmers. The farmer's market, a large structure with an open-air shed attached, is located a few miles from town, and is where many of the region's farmers – including the Amish – sell their produce. Over the Broad Mountain, there are the anthracite strip mining fields near Good Spring Creek. Some of the inhabitants of the surrounding towns of the coalfields are of Polish descent. There is a vast difference between the landscape of the valley and the coalfields. The land is slow to recover from strip mining. The vegetation in abandoned mining areas is sparse scrub. Earlier tunnel mining has also left its mark in Mahantongo Mountain. A turn of the century high school located on the road to Pottsville was abandoned because an old mineshaft below it collapsed. This destruction of the landscape forms a frame that contains this idyllic valley with its State game lands and agricultural communities. The old Appalachian Trail is a few miles beyond the mountains. It is not hard to believe that when the early German settlers traveled the ridge and valley route south, they might have started out from places like Hegins, and the people I meet here are the descendants of those who stayed behind. The church bells in the Church of Christ and the Lutheran Church ring out regularly during the day. I suppose this traditionally was intended to be for the benefit of farmers in their fields. I made the trip to this out of the way place to visit during the Thanksgiving break in 2001.

After the steep ascent of the Appalachian Range between Tower City and Tremont in eastern Pennsylvania, Interstate 81 follows a ridge above the towns in the valley. Hegins is located on PA 25 at Exit 84. Once off I-81, the descent from the west side of the ridge is rapid. In little more than a mile the road level decreases in elevation by about 200 feet as it winds along the contours of the mountain. It is a truly harrowing experience for the uninitiated; and the first time I negotiated this serpentine horror of road, my brakes nearly overheated. When I stopped at the crossroads at PA 125 in Hegins, I noticed my wheel rims were hot to the touch, and a slight odor like cooking brake fluid emanated from behind the wheel. Being a flatlander, I need some education in mountain driving. Otherwise, some aspects of life here seemed familiarly like rural southeastern North Carolina.

Dinner for the local families, I surmised, consisted of locally grown corn, sausage from the meat market, home baked black bread, and also cheese from the farmer's market. It is simple, yet hearty food. The eggs come from an egg packing plant a block from the center of town. Hegins has no supermarket or convenient store, so most of the meat and vegetables are local. The mountains that contain the town and its surrounding communities seemed self-sufficient in many ways, and many of the traditional foods and institutions are appeared to have been maintained. But I, being a stranger to these parts, cannot say with any degree of certainty.

During my brief stay, I had a chance to visit nearby Pottsville. The architecture in the town impressed me, particularly those buildings constructed in styles rarely appearing in my region of the South. Other than a fascinating visit to the Yuegling Brewery, I had a sandwich from a deli there (I don't recall the name) that was exceptional good.

On departing the valley, I stopped at the old Lutheran Church (now named Christ Church, Church of Christ) to take a few photographs. The old rustic sanctuary presented its sublime form against the broad fields and mountains. Then I began the steep climb up to interstate. My car strained as it ascended this steep grade, and the cars traveling down gave me cause for concern as they whipped around the curves. Finally, at the top, before entering the interstate, I took a parting glance at the dense leafless trees that lined the road below me.

[Aside: The great American geographer Carl Sauer did not think much of "stay at home geographers." Historic and cultural geography exited my interest as early as 1999. During the summer of that year, I set out on a five-week road trip with my dad that covered most of the continental United States. That year, gasoline prices had dropped below a dollar in many places. This was the first of many such trips including a visit to Texas and Louisiana, the Petrified Forest, Craters of the Moon National Monument, and Yellowstone. All along the way, I visited as many museums, national parks, and local curiosities as time permitted. Since 2006, however, I have on had one opportunity to take an extended field trip. During the break between the summer and fall terms, I visited Chaco Canyon. Since then, all of my travels have been within North Carolina.]



Figure 1. The exit to Hegins, PA on PA 25 off I-81



Figure 2. The landscape on PA 25 after exiting I-81



Figure 3. The landscape near Christ Church, United Church of Christ on PA 25



Figure 4. A view from the parking lot of Christ Church, United Church of Christ on PA 25



Figure 5. Christ Church, United Church of Christ on PA 25



Figure 6. Coordinates: 40° 39.277' N, 76° 27.299' W. Elevation: 906 feet



Figure 7. A view of the front of Christ Church (note the windows)



Figure 8. This old brick in the new foundation of the church shows the date of construction.



Figure 9. The stained glass window “Christ Evangelical Reformed & Lutheran Church” above the entrance is different than the sign in the yard.



Figure 10. This country road behind Hegin, PA follows Pine Creek.



Figure 11. The bank of Pine Creek



Figure 12. Pine Creek runs a considerable distance through the valley.



Figure 13. A wooden bridge over Pine Creek.



Figure 14. Planks from the bridge are missing.



Figure 15. The pattern of cobbles in the creek indicates periodic heavy flow.



Figure 16. Boulders, cobbles, and gravel in Pine Creek



Figure 17. Exposed roots on the creek bank also indicate occasional high velocity of stream flow.



Figure 18. Woody debris and cutting into the bank



Figure 19. More woody debris



Figure 20. Under normal conditions, the creek is rather shallow.



Figure 21. The Burd Patterson historic marker in Pottsville, PA (app. 18 miles east of Hegins on PA 25/US 209)



Figure 22. American Civil War monument in Pottsville, PA



Figure 23. A wonderful Second Empire style house in Pottsville, PA



Figure 24. The view of a street in Pottsville, PA



Figure 25. Center view of the same street



Figure 26. The opposite side of the same street



Figure 27. Another fine old structure in Pottsville, PA

A NOTE ON THE DESTRUCTION OF BABIES HOSPITAL (Wilmington, N.C.)

The Babies Hospital was once located at 7225 Wrightsville Avenue facing the Intracoastal Waterway and the town of Wrightsville Beach. Preservationists had fought heroically to save this historic and beautiful structure, but in the end they failed. Demolition began in late January 2004, and nothing has been built on the site.

My own experience in the Babies Hospital as a child doesn't really rank up there with my favorites. I contracted pneumonia when I was about eleven years old. After spending two weeks at Babies Hospital, I suffered a relapse after a few days in school, and ended up back in the same hospital bed for another month. I remember that room well. It was Room 32 on the second floor of the Wrightsville Avenue wing. My window faced the rear of the building, and it really wasn't much of a view. The bathroom was on the right hand side as you entered. The meals were the typical hospital fare *i.e.* bland, soggy, and lukewarm. The nurse with the needles would always arrive just before sunrise. The one with the pills came just after noon.

The staff, as I recall, were very sympathetic not only to me, but to all the children. The nurse in charge of the floor, a very pleasant woman with an English accent, had a talent for engaging children in conversation and helping them to overcome the feelings of loneliness and fear associated with separation from home and family. One of the orderlies told round about jokes, "The sun is up, why aren't you? Better get out of the sack, and take a look. It not going to stay up there all day!"

Boredom was the worst part of being there, and that was unavoidable. My parents brought books, more books, jigsaw puzzles, and drawing pads. My dad brought a crystal radio set kit. After painstaking assembling, setting the crystal, winding the tuning coil, and attaching the headset, I turned to the last page of the instruction booklet. There was an illustration on this page that showed a wire stretched between two trees with line between the labeled "40 feet." So that was what all this extra wire was for! But there was no place to run it! I had also made the acquaintance of a boy my age, or slightly older, who wanted to build bridges when he grew up. His father would visit him often, and help him build models of planes and ships. The father, as I recall, had lost part of his right arm in the Korean War. Over the period of my stay, I had done all the homework assignments my teacher had been sending me, and more. I read my geography textbook from cover to cover, and suffered the nurses to explain the meaning of such terms as immunity and histopathology. When the time came for me to go home, I was actually ahead in my studies. Getting back into the routine after I was home was difficult. But after a while, I was back to all that rough and tumble kid play.

Though I do not remember this entire experience well, one memory stands as the most significant. There was a young women, I presume a nurse, who was painting murals on the walls in the hallways. I never exchanged a word with here, but would watch her

work for hours. She had a very kind face, and dark hair that was pulled back in a ponytail. Her murals were bright depictions of outdoor scenes, cartoon characters, animals, and children at play. My colleagues now would term this art as vernacular. Certainly all this artwork was painted over when the building ceased to be a children's hospital, but there are techniques for recovering art that has been painted over. When the building fell, that was the end of it. This anonymous woman's labor of love passed unnoticed. She, like all those whose productive years unfolding in that noble structure, are consigned to the fading memories of so many children turned old.

MIGRANTS

Shortly before midnight on August 1, 2001, I ramped off I-95 near Rocky Mount, North Carolina, at the rest stop to get a cup of coffee and a bar of candy from the concession machines that are the usual fixture of these facilities. As I drove into the parking area, I spotted an old rust red pickup truck with a dingy white camper top. A stout, middle-aged woman was unloading an assortment of items that appeared to be clothing piled into large produce baskets, and a few young children were gathered around her. On the sidewalk in front of the truck someone was lying on his or her side completely covered with a blanket. All that could be seen of this person was a tuft of dark hair protruding from the blanket. It would seem as if I had driven onto the set of a remake of *Grapes of Wrath*. I paused to watch in amazement, as did other numbed travelers milling about the rest stop, while this whole family crawled under the blanket. It momentarily took on the appearance of a tent set out on the hard sidewalk. Then the woman reclined on the concrete beside the undulating mass and put her arm over it. After a moment, I felt a sinking inside and quickly tried to dispel it by walking to the concession area to get my coffee.

On returning to my car, I looked back towards the pickup truck. It was about forty feet from the place where I was parked. This time I saw a small girl of probably no more than five years old standing at the rear of the truck. She had short blond hair and a cherub's face. The woman, who I presume was the little girl's mother, was stooped below her taking off her shoes. The woman lifted the child from the pavement and placed her inside the back of the truck and closed the camper door.

As long as I live, this brief scene will stand out crystal-clear in my memory as if it only happened a few minutes ago.

